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=> d his

     (FILE 'HOME' ENTERED AT 19:02:36 ON 10 MAR 2003)

     FILE 'MEDLINE, CAPLUS, BIOSIS, SCISEARCH' ENTERED AT 19:02:47 ON 10 MAR
     2003
L1        19805 S (CLOSE?(3A)CIRCULAR OR SUPERCOIL?)(5A)(DNA OR PLASMID OR VECT
L2       109211 S (CITRIC OR TARTARIC)(W)ACID
L3            1 S L1(S)L2
L4            4 S L1 AND L2
L5            4 DUP REM L4 (0 DUPLICATES REMOVED)

=> d bib ab 1-4 l5

L5   ANSWER 1 OF 4  CAPLUS  COPYRIGHT 2003 ACS
AN   2002:609561  CAPLUS
DN   137:151095
TI   Preparation of supercoiled plasmid DNA by
     culture of bacteria in a defined medium
IN   Voss, Carsten
PA   Plasmidfactory Gmbh & Co. Kg, Germany
SO   Ger. Offen., 22 pp.
     CODEN: GWXXBX
DT   Patent
LA   German
FAN.CNT 1
     PATENT NO.        KIND  DATE          APPLICATION NO.  DATE
     ----------------  ----  --------      ---------------  --------
PI   DE 10106493        A1   20020814      DE 2001-10106493 20010213
     WO 2002064752      A1   20020822      WO 2002-EP290    20020114
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM,
             HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
             LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL,
             PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA,
             UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI DE 2001-10106493  A    20010213
AB   The present invention concerns a procedure for the prodn. of nucleic
     acids, esp. supercoiled DNA.  The method involves
     cultivating a bacterial host carrying the plasmid to high cell densities
     in a batch process in a defined synthetic aq. medium that is free of
     complex components such as animal exts.  The medium contains an org.
     carbon source, an inorg. nitrogen source, mineral salts, and an org.
     nitrogen compd. that supports bacterial metab., e.g. vitamins or amino
     acids.  The purified nucleic acid, isolated from bacteria cells is
     suitable for use in gene therapy, cell therapy or genetic inoculation.
     Optimization expts. in which the effect of medium compn. and fermn.
     conditions on increasing the yield of the plasmid are described.

L5   ANSWER 2 OF 4  CAPLUS  COPYRIGHT 2003 ACS
AN   2001:630905  CAPLUS
DN   135:177728
TI   Method for nucleic acid purification using iodine
IN   Pulleyblank, David E.
PA   Can.
SO   U.S., 16 pp.
     CODEN: USXXAM
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.        KIND  DATE          APPLICATION NO.  DATE
```

PI	US 6281349	B1	20010828	US 2000-640377	20000817
PRAI	US 1999-149292P	P	19990818		

AB The present invention provides a novel method for the purifn. of plasmid nucleic acid prepns. More specifically, the present invention provides a novel method using iodine for purifying plasmid nucleic acid suitable for several different applications in mol. biol.

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 4 MEDLINE
AN 96128075 MEDLINE
DN 96128075 PubMed ID: 8554534
TI Metabolization of iron by plant cells using O-Trensox, a high-affinity abiotic iron-chelating agent.
AU Caris C; Baret P; Beguin C; Serratrice G; Pierre J L; Laulhere J P
CS Laboratoire d'Etudes Dynamiques et Structurales de la Selectivite, Universite J. Fourier, URA CNRS 0332, Grenoble, France.
SO BIOCHEMICAL JOURNAL, (1995 Dec 15) 312 (Pt 3) 879-85.
Journal code: 2984726R. ISSN: 0264-6021.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199602
ED Entered STN: 19960306
Last Updated on STN: 19980206
Entered Medline: 19960220
AB A synthetic siderophore, O-Trensox (L), has been designed and synthesized to improve iron nutrition of plants. The affinity for iron of this ligand [pFe(III) = 29.5 and pFe(II) = 17.9] is very high compared with EDTA. In spite of its high and specific affinity for iron, O-Trensox was found to be able to prevent, and to reverse, iron chlorosis in several plant species grown in axenic conditions. It also allows the iron nutrition and growth of Acer pseudoplatanus L. cell suspensions. The rate of iron metabolization was monitored by 59Fe radioiron. Ferritins, the iron storage proteins, are shown to be the first iron-labelled proteins during iron metabolization and to be able to further dispatch the metal. Using Fe(III)-Trensox, the rate of iron incorporation into ferritin was found to be higher than when using Fe-EDTA, but slower than with Fe-citrate, the natural iron carrier in xylem. During a plant cell culture, the extracellular concentrations of iron complex and free ligand were measured; changes in their relative amounts showed that the iron complex is dissociated extracellularly and that only iron is internalized. This suggests a high affinity for iron of a putative carrier on the plasmalemma. In contrast with Fe-citrate and Fe-EDTA complexes, Fe(III)-Trensox is not photoreducible. Its ability to induce radical damage as a Fenton reagent was tested using **supercoiled DNA** as target molecule. Unlike Fe-citrate and Fe-EDTA, Fe(II)-Trensox and Fe(III)-Trensox were proven to be harmless even during ascorbate-driven reduction, while Fe EDTA and Fe-citrate generate heavy damage to DNA.

L5 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2003 ACS
AN 1992:586464 CAPLUS
DN 117:186464
TI Iron-mediated DNA damage: sensitive detection of DNA strand breakage catalyzed by iron
AU Toyokuni, Shinya; Sagripanti, Jose Luis
CS Cent. Dev. Radiol. Health, Food and Drug Adm., Rockville, MD, USA
SO Journal of Inorganic Biochemistry (1992), 47(3-4), 241-8
CODEN: JIBIDJ; ISSN: 0162-0134
DT Journal
LA English

AB The authors studied the in vitro effect of low concns. of Fe(II) alone or Fe(III) in the presence of reducing agents on **supercoiled plasmid DNA**. The assay, based on the relaxation and linearization of **supercoiled DNA**, is simple yet sensitive and quant. Iron mediated the prodn. of single and double strand breaks in **supercoiled DNA**. Iron chelators, free radical scavengers, and enzymes of the oxygen redn. pathways modulated the DNA damage. Fe(III) NTA plus either H2O2, L-ascorbate, or L-cysteine produced single and double strand breaks as a function of reductant concn. A combination of 0.1 .mu.M Fe(III) NTA and 100 .mu.M L-ascorbate induced detectable DNA strand breaks after 30 min at 24.degree.. Whereas superoxide dismutase was inhibitory only in systems contg. H2O2 as reductant, catalase inhibited DNA breakage in all the Fe-mediated systems studied. The effect of scavengers and enzymes indicates that H2O2 and .bul.OH are involved in the DNA damaging process. These reactions may account for the toxicity and carcinogenicity assocd. with iron overload.

=> d bib l3

L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS
AN 2002:609561 CAPLUS
DN 137:151095
TI Preparation of supercoiled plasmid DNA by culture of bacteria in a defined medium
IN Voss, Carsten
PA Plasmidfactory Gmbh & Co. Kg, Germany
SO Ger. Offen., 22 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10106493	A1	20020814	DE 2001-10106493	20010213
	WO 2002064752	A1	20020822	WO 2002-EP290	20020114

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI DE 2001-10106493 A 20010213

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=> d his

(FILE 'HOME' ENTERED AT 19:02:36 ON 10 MAR 2003)

FILE 'MEDLINE, CAPLUS, BIOSIS, SCISEARCH' ENTERED AT 19:02:47 ON 10 MAR 2003

L1 19805 S (CLOSE?(3A)CIRCULAR OR SUPERCOIL?)(5A)(DNA OR PLASMID OR VECT
L2 109211 S (CITRIC OR TARTARIC)(W)ACID
L3 1 S L1(S)L2
L4 4 S L1 AND L2
L5 4 DUP REM L4 (0 DUPLICATES REMOVED)
L6 26 S COLLAGEN AND L1
L7 10 DUP REM L6 (16 DUPLICATES REMOVED)

=> d bib ab 1-10 l7

L7 ANSWER 1 OF 10 MEDLINE DUPLICATE 1
AN 2002238620 MEDLINE
DN 21972701 PubMed ID: 11975846
TI Delivery of plasmid DNA to articular chondrocytes via novel **collagen**-glycosaminoglycan matrices.
AU Samuel R E; Lee C R; Ghivizzani S C; Evans C H; Yannas I V; Olsen B R; Spector M
CS Department of Orthopedic Surgery, Brigham and Women's Hospital, Harvard Medical School, 75 Francis Street, Boston, MA 02115, USA.
SO HUMAN GENE THERAPY, (2002 May 1) 13 (7) 791-802.
Journal code: 9008950. ISSN: 1043-0342.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200208
ED Entered STN: 20020429
Last Updated on STN: 20020831
Entered Medline: 20020830
AB Our primary objective was to fabricate a porous gene-supplemented **collagen**-glycosaminoglycan (GSCG) matrix for sustained delivery (over a period of several weeks) of plasmid DNA to articular chondrocytes when implanted into cartilage lesions. The specific aims of this in vitro study were to determine the release kinetics profiles of plasmid DNA from the GSCG matrices, and to determine the ability of the released plasmid DNA to transfect adult canine articular chondrocytes. In particular, we evaluated the effects of two variables, cross-linking treatment and the pH at which the DNA was incorporated into the matrices, on the amount of the plasmid DNA that remained bound to the GSCG matrices after passive (nonenzymatic) leaching and on the expression of a reporter gene in articular chondrocytes grown in the GSCG matrices. **Collagen**-glycosaminoglycan matrices were synthesized without cross-linking, and by three cross-linking treatments: dehydrothermal (DHT) treatment, 1-ethyl-3-(3-dimethyl aminopropyl) carbodiimide (EDC) treatment, and exposure to ultraviolet (UV) radiation. The plasmid DNA was incorporated into the **collagen**-glycosaminoglycan matrices in solutions at pH 2.5 or 7.5. Transmission electron microscopy studies revealed plasmid DNA bound to the walls of the porous GSCG matrices. In general, the GSCG matrices fabricated at pH 2.5 retained a larger fraction of the initial DNA load after 28 days of incubation in Tris-EDTA buffer. The passive, solvent-mediated release of the plasmid DNA from the GSCG matrices showed a biphasic pattern consisting of a faster, early release rate over the initial 8 hr of leaching followed by a slower, late release rate that was relatively constant over the subsequent 28 days of leaching. Electrophoretic analyses revealed that the plasmid DNA released from the GSCG matrices fabricated at pH 2.5 had been linearized and/or degraded; whereas the plasmid DNA leached from the GSCG matrices prepared with a DNA

solution at pH 7.5 was primarily **supercoiled** and linear. **Plasmid DNA** released from all GSCG matrix formulations was able to generate luciferase reporter gene expression in monolayer-cultured chondrocytes transfected with the aid of a commercial lipid reagent, and in chondrocytes cultured in the GSCG matrices without the aid of a supplemental transfection reagent. Luciferase expression in chondrocyte-seeded GSCG constructs was evident throughout the culture period (28 days), with the EDC and UV cross-linked matrices prepared at pH 7.5 providing the highest transgene expression levels. We conclude that released plasmid DNA continually transfected canine articular chondrocytes seeded into GSCG matrices in vitro for a 4-week period as evidenced by luciferase reporter gene expression. Thus, GSCG matrices can be fabricated to provide sustained release of plasmid DNA carrying a potential therapeutic gene.

L7 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 2
AN 2002:371740 CAPLUS
DN 137:197554
TI Photosensitization of DNA damage by glycated proteins
AU Wondrak, Georg T.; Jacobson, Elaine L.; Jacobson, Myron K.
CS Department of Pharmacology and Toxicology, College of Pharmacy, Arizona Cancer Center, University of Arizona, Tucson, AZ, USA
SO Photochemical & Photobiological Sciences (2002), 1(5), 355-363
CODEN: PPSHCB; ISSN: 1474-905X
PB Royal Society of Chemistry
DT Journal
LA English
AB Photosensitized DNA damage in skin is thought to be an important mechanism of UV phototoxicity. Here we demonstrate that proteins modified by advanced glycation endproducts (AGE-proteins) are photosensitizers of DNA damage and show that multiple mechanisms are involved in AGE-sensitization. AGE-chromophores accumulate on long-lived skin proteins such as **collagen** and elastin as a consequence of glycation, the spontaneous amino-carbonyl reaction of protein-bound lysine and arginine residues with reactive carbonyl species. AGE-proteins accumulate in both the nucleus and the cytoplasm of mammalian cells. To test the hypothesis that protein-bound AGEs in close proximity to DNA are potent UV-photosensitizers, a simple plasmid DNA cleavage assay was established. Irradn. of **supercoiled** .PHI.X 174 **DNA** with solar simulated light in the presence of AGE-modified bovine serum albumin or AGE-modified RNAse A induced DNA single strand breaks. The sensitization potency of the glycated protein correlated with increased AGE-modification and the unmodified protein displayed no photosensitizing activity. AGE-sensitized formation of reactive oxygen species was not fully responsible for the obsd. DNA damage and other mechanisms such as direct electron transfer interaction between photoexcited AGE and DNA are likely to be involved. Glycated proteins in skin may equally function as potent photosensitizers of DNA damage with implications for photoaging and photocarcinogenesis.
RE.CNT 58 THERE ARE 58 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 10 MEDLINE DUPLICATE 3
AN 1998154896 MEDLINE
DN 98154896 PubMed ID: 9495508
TI Nuclear matrix proteins and osteoblast gene expression.
AU Bidwell J P; Alvarez M; Feister H; Onyia J; Hock J
CS Department of Periodontics, Indiana University School of Dentistry, Indianapolis 46202, USA.
NC R55 DK48310 (NIDDK)
RO1 DE7272 (NIDCR)
SO JOURNAL OF BONE AND MINERAL RESEARCH, (1998 Feb) 13 (2) 155-67. Ref: 164
Journal code: 8610640. ISSN: 0884 0431.
CY United States

DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 199806
ED Entered STN: 19980618
Last Updated on STN: 20000303
Entered Medline: 19980609
AB The molecular mechanisms that couple osteoblast structure and gene expression are emerging from recent studies on the bone extracellular matrix, integrins, the cytoskeleton, and the nucleoskeleton (nuclear matrix). These proteins form a dynamic structural network, the tissue matrix, that physically links the genes with the substructure of the cell and its substrate. The molecular analog of cell structure is the geometry of the promoter. The degree of **supercoiling** and bending of promoter **DNA** can regulate transcriptional activity. Nuclear matrix proteins may render a change in cytoskeletal organization into a bend or twist in the promoter of target genes. We review the role of nuclear matrix proteins in the regulation of gene expression with special emphasis on osseous tissue. Nuclear matrix proteins bind to the osteocalcin and type I **collagen** promoters in osteoblasts. One such protein is Cbfa1, a recently described transcriptional activator of osteoblast differentiation. Although their mechanisms of action are unknown, some nuclear matrix proteins may act as "architectural" transcription factors, regulating gene expression by bending the promoter and altering the interactions between other trans-acting proteins. The osteoblast nuclear matrix is comprised of cell- and phenotype-specific proteins including proteins common to all cells. Nuclear matrix proteins specific to the osteoblast developmental stage and proteins that distinguish osteosarcoma from the osteoblast have been identified. Recent studies indicating that nuclear matrix proteins mediate bone cell response to parathyroid hormone and vitamin D are discussed.

L7 ANSWER 4 OF 10 MEDLINE DUPLICATE 4
AN 94103274 MEDLINE
DN 94103274 PubMed ID: 8276854
TI Structural and functional characterization of the human decorin gene promoter. A homopurine-homopyrimidine S1 nuclease-sensitive region is involved in transcriptional control.
AU Santra M; Danielson K G; Iozzo R V
CS Department of Pathology and Cell Biology, Thomas Jefferson University, Philadelphia, Pennsylvania 19107.
NC CA-39481 (NCI)
CA-47282 (NCI)
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1994 Jan 7) 269 (1) 579-87.
Journal code: 2985121R. ISSN: 0021-9258.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199402
ED Entered STN: 19940218
Last Updated on STN: 19970203
Entered Medline: 19940208
AB Decorin is a leucine-rich, chondroitin/dermatan sulfate proteoglycan which binds **collagen** and growth factors. We have recently completed the genomic organization of human decorin and discovered two alternatively spliced leader exons, designated exon Ia and Ib, in the 5'-untranslated region. Initial analysis of the sequences upstream to these two exons showed that promoter Ia contained only two GC boxes while promoter Ib contained a CAAT and two TATA boxes in close proximity to the transcription start site. To determine if these 5'-flanking sequences exhibited promoter activity, chimeric chloramphenicol acetyltransferase

expression plasmids containing the promoter region of either exon Ia or Ib were transfected into HeLa and MG-63 osteosarcoma cells. The results showed that only the region flanking exon Ib was functional. In vitro transcription assay generated two transcripts of 92 and 82 base pairs (bp) indicating that both TATA boxes could be used. Using stepwise 5' deletion analysis we found that the minimum promoter region at -140 bp from the transcription start site, which contained only the CAAT and the two TATA boxes, exhibited strong promoter activity. When a larger construct containing an additional 800 bp of upstream region was tested, a significant increase in transcriptional activity was observed. Interestingly, this promoter region contained several putative binding sites for ubiquitous factors (AP1, AP5, and NF-kappa B) and for transforming growth factor-beta and a 150-bp homopurine/homopyrimidine element with several mirror repeats. When contained in a **supercoiled plasmid**, this sequence exhibited sensitivity to endonuclease S1, an enzyme that preferentially digests single-stranded DNA. Precise S1 mapping, obtained by direct sequencing of nine distinct S1-generated clones, revealed that in all cases the borders of the sensitive sequence resided within the pur/pyr segment. We propose that this region of the promoter could adopt an intramolecular hairpin triplex structure in vivo and may play a role in the chromatin organization at the decorin gene locus. In addition, this region was able to up-regulate a minimal heterologous promoter in transient transfection assays. The results show that the structure of the decorin gene promoter is different from that of any other proteoglycan promoter characterized so far and indicate that the pur/pyr segment plays a role in the regulation of gene transcription.

L7 ANSWER 5 OF 10 SCISEARCH COPYRIGHT 2003 ISI (R)
AN 93:176368 SCISEARCH
GA The Genuine Article (R) Number: KR477
TI DEPENDENCE OF THE YIELD OF STRAND BREAKS INDUCED BY GAMMA-DNA ON THE PHYSICAL CONDITIONS OF EXPOSURE - WATER-CONTENT AND TEMPERATURE
AU ITO T (Reprint); BAKER S C; STICKLEY C D; PEAK J G; PEAK M J
CS ARGONNE NATL LAB, DIV BIOL & MED RES, ARGONNE, IL, 60439
CYA USA
SO INTERNATIONAL JOURNAL OF RADIATION BIOLOGY, (MAR 1993) Vol. 63, No. 3, pp. 289-296.
ISSN: 0020-7616.
DT Article; Journal
FS LIFE
LA ENGLISH
REC Reference Count: 32
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The induction by Co-60 gamma-rays of DNA breaks, revealed by relaxation (single-strand breaks, SSBs) and linearization (double-strand breaks, DSBs) of **supercoiled plasmid DNA**, was measured under three ir-radiation conditions, the DNA being in a dry, humid, or aqueous state in the absence of oxygen, at 25 or -196-degrees-C (77 K). Yields of strand breaks (3.0 x 10(-10) SSB/Gy.Da and 2.6 x 10(-11) DSB/Gy-Da) in DNA exposed to a stream of humidified nitrogen were higher than those in the dry condition (5.7 x 10(-11) SSB/Gy.Da and 3.2 x 10(-12) DSB/Gy.Da), but both these yields were markedly lower than those measured for DNA in aqueous solution at a concentration of 73 mug/cm3 (1.14 x 10(-7) SSB/Gy.Da and 5.4 x 10(-9) DSB/Gy-Da). Over 100-fold fewer SSBs were observed in the frozen aqueous system compared with the nonfrozen liquid state, whereas in the dry and humid states, freezing did not affect the yield as much. The same trend was observed for DSBs. However, the induction of SSBs was more affected than that of DSBs by freezing in the aqueous systems. An interesting reverse relationship was observed in humid systems. The observed linearity of DSB induction with radiation dose supported a single-event mechanism. A comparison of G values for humid systems revealed that the role of bound water in radiation damage becomes significant in the nonfrozen state. Based on these and other measurements

of strand breaks under different conditions, the significance of bound and free water on the yields of DNA strand breaks by gamma-rays is discussed, and the relevance of these results to the in vivo situation outlined.

L7 ANSWER 6 OF 10 MEDLINE DUPLICATE 5
AN 94083085 MEDLINE
DN 94083085 PubMed ID: 8260198
TI A casein kinase type II (CKII)-like nuclear protein kinase associates with, phosphorylates, and activates topoisomerase I.
AU Turman M A; Douvas A
CS Department of Biochemistry, University of Colorado Health Sciences Center, Denver 80262.
SO BIOCHEMICAL MEDICINE AND METABOLIC BIOLOGY, (1993 Oct) 50 (2) 210-25.
Journal code: 8605718. ISSN: 0885-4505.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199401
ED Entered STN: 19940209
Last Updated on STN: 20020420
Entered Medline: 19940125
AB Topoisomerase I (Topo I) is involved in many cellular functions that involve unwinding of **supercoiled DNA**, such as transcription and replication. Topo I is also the target of autoimmune antibodies in progressive systemic sclerosis (scleroderma), and abnormal regulation of Topo I may influence the excessive production of **collagen** found in scleroderma. Topo I is phosphorylated in vivo at serine residues and, in vitro, the activity of Topo I is increased by phosphorylation by casein kinase type II (CKII) and protein kinase C (PKC). In this study, a protein kinase activity from rat liver nuclei is shown to copurify with Topo I during Bio-Rex 70 cation exchange chromatography. The kinase can phosphorylate Topo I at serine residues, resulting in a threefold increase in topoisomerase activity. A relatively tight association between this kinase and Topo I is demonstrated by the ability to coprecipitate the kinase with scleroderma autoimmune anti-Topo I antibodies. The kinase activity is similar to CKII since it is Ca2+ and cyclic nucleotide independent, it can utilize either ATP or GTP as phosphate donor, and it can phosphorylate casein and phosvitin, but not histones. However, unlike typical CKII, the Topo I-associated kinase could utilize Mn2+ almost as well as Mg2+, it is not stimulated by polyamines, and it does not appear to undergo autophosphorylation. In conclusion, we demonstrate that rat liver Topo I is relatively tightly associated with a CKII-like protein kinase that can phosphorylate and activate Topo I. These findings provide corroborative evidence that CKII, or a CKII-like protein kinase, is a physiologic regulator of Topo I.

L7 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2003 ACS
AN 1988:479705 CAPLUS
DN 109:79705
TI Pharmaceutical implants containing gyrase inhibitors for the treatment of infections
IN Wahlig, Helmut; Dingeldein, Elvira; Rothe, Johannes; Stille, Wolfgang
PA Merck Patent G.m.b.H., Fed. Rep. Ger.
SO Ger. Offen., 7 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3542972	A1	19870611	DE 1985-3542972	19851205
	EP 234004	A2	19870902	EP 1986-116207	19861122
	EP 234004	A3	19871028		

	EP 234004	B1	19910123		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
	AT 60229	E	19910215	AT 1986-116207	19861122
	ES 2036521	T3	19930601	ES 1986-116207	19861122
	CA 1283052	A1	19910416	CA 1986-524402	19861203
	HU 45197	A2	19880628	HU 1986-5017	19861204
	HU 198623	B	19891128		
	AU 8666171	A1	19870611	AU 1986-66171	19861205
	AU 602874	B2	19901101		
	JP 62132817	A2	19870616	JP 1986-289126	19861205
	JP 2700881	B2	19980121		
	ZA 8609236	A	19870729	ZA 1986-9236	19861205
PRAI	DE 1985-3542972		19851205		
	EP 1986-116207		19861122		

AB The title pharmaceutical consists of an implantable carrier and .gtoreq.1 gyrase inhibitor. Particles for implants in osteomyelitic cavities were prepd. by hardening 40 g of a mixt. contg. Me acrylate-Me methacrylate copolymer, Bz2O2 0.5, ZrO2 15% by wt., traces of chlorophyll, and 0.5 g ciprofloxacin, with a mixt. contg. 10 mL Me methacrylate, 0.7% dimethyl-p-toluidine, and 0.006% hydroquinone.

L7 ANSWER 8 OF 10 MEDLINE DUPLICATE 6
AN 88007542 MEDLINE
DN 88007542 PubMed ID: 2820966
TI Unusual DNA sequences located within the promoter region and the first intron of the chicken pro-alpha 1(I) **collagen** gene.
AU Finer M H; Aho S; Gerstenfeld L C; Boedtker H; Doty P
CS Department of Biochemistry and Molecular Biology, Harvard University, Cambridge, Massachusetts 02138.
NC HD 01229 (NICHD)
HD 20705 (NICHD)
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1987 Sep 25) 262 (27) 13323-32.
Journal code: 2985121R. ISSN: 0021-9258.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198711
ED Entered STN: 19900305
Last Updated on STN: 19970203
Entered Medline: 19871102
AB Genomic clones corresponding to the amino-terminal propeptide and 5'-flanking sequences of the chicken pro-alpha 1(I) **collagen** gene were isolated as a first step in the identification of DNA sequences important for transcriptional regulation of the pro-alpha 1(I) **collagen** gene. Due to the failure to identify positive clones in either primary or amplified genomic libraries, a 5.1-kilobase pair StuI genomic fragment identified by Southern blotting was enriched by sucrose gradient fractionation of genomic DNA and cloned into lambda gt11. Comparison of the DNA sequence of the 5.1-kilobase pair StuI fragment to the DNA sequence of a cDNA clone encoding the amino-terminal propeptide, signal peptide, and the 5' untranslated region identified the first four exons and most of the fifth. Exon size and intron position have been largely conserved between human and chicken alpha 1(I) genes. DNA sequence analysis of the region 5' to the transcription initiation site identified the canonical TATA and CAAT boxes. However, the 40-nucleotide pyrimidine stretch centered between -150 and -180 nucleotides, found in all previously isolated type I procollagen genes from chicken, mouse, and human, was absent in the chicken pro-alpha 1(I) **collagen** gene. This sequence corresponds to the in vivo DNase I hypersensitive site in the chicken pro-alpha 2(I) and mouse pro-alpha 1(I) **collagen** genes, as well as the in vitro S1 nuclease hypersensitive site in both chicken and mouse pro-alpha 2(I) **collagen** genes Two unusual DNA sequences were identified within the chicken pro-alpha 1(I)

collagen gene. Fifteen tandem repeats of the sequence GGGGAGA were identified within the first intron, 300 nucleotides 3' to the first exon. This sequence was identified due to its hypersensitivity to S1 nuclease in vitro in **supercoiled plasmids**. The second sequence located 5' to -180 contained at least 25 copies of a polymorphic, 23-base pair tandemly repeated sequence not identified in other type I procollagen genes. Both of these tandem repeat sequences were identified at other locations in the chicken genome by Southern blot hybridization.

L7 ANSWER 9 OF 10 MEDLINE DUPLICATE 7
AN 84212494 MEDLINE
DN 84212494 PubMed ID: 6327689
TI A sequence conserved in both the chicken and mouse alpha 2(I) **collagen** promoter contains sites sensitive to S1 nuclease.
AU McKeon C; Schmidt A; de Crombrugghe B
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1984 May 25) 259 (10) 6636-40.
Journal code: 2985121R. ISSN: 0021-9258.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198407
ED Entered STN: 19900320
Last Updated on STN: 19900320
Entered Medline: 19840702
AB We have examined the S1 nuclease sensitivity in the promoter of both the chicken and mouse alpha 2(I) **collagen** genes. When these **DNAs** are introduced into **supercoiled plasmids** and digested with S1 nuclease, a discrete region containing one or more cleavages is found in each promoter. These S1 cleavage sites were mapped by the distance of the S1 site from known restriction enzyme cleavage sites. In the chicken gene, the S1-sensitive segment is located 180 to 200 base pairs preceding the start site of transcription, whereas in the mouse promoter it is between -145 to -165 base pairs. This site in the chicken promoter maps to the segment that has previously been shown to be S1 and DNase I hypersensitive in chromatin. Although these S1 sites are found at different distances from the start site of transcription in the two promoters, the sequences at these sites are strongly conserved between the two species. Each sequence consists of an identical tandem repeat containing a short palindrome within each repeat. Since the DNA sequence does not exhibit the features that would favor either a left-handed Z-DNA configuration or a cruciform structure, an alternative model is discussed that could account for the S1 sensitivity of these sequences. The conservation of these sequences and their S1 sensitivity suggests they play a role in the activation or regulation of the alpha 2(I) **collagen** gene promoters.

L7 ANSWER 10 OF 10 MEDLINE DUPLICATE 8
AN 84170361 MEDLINE
DN 84170361 PubMed ID: 6324210
TI Endonuclease S1-sensitive site in chicken pro-alpha 2(I) **collagen** 5' flanking gene region.
AU Finer M H; Fodor E J; Boedtker H; Doty P
SO PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, (1984 Mar) 81 (6) 1659-63.
Journal code: 7505876. ISSN: 0027-8424.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198405
ED Entered STN: 19900319
Last Updated on STN: 19900319
Entered Medline: 19840516

AB A site that is preferentially cleaved by the single-strand-specific endonuclease from Aspergillus oryzae was located in vitro 180 base pairs upstream from the 5' end of the chicken pro-alpha 2(I) **collagen** gene. It is found in **supercoiled plasmids** with a negative superhelical density of -0.024 or more but not in linear DNA molecules. The nuclease S1 sensitivity is retained in plasmids containing genomic fragments extending from position +8 to -285 (where +1 is the first transcribed base) and from -147 to -351 and also in a 5.7-kilobase EcoRI fragment that extends 1.6 kilobases 5' and 4.1 kilobases 3' to the 5' end of the gene. Analysis at the nucleotide level on a DNA sequence gel places the site at -181 to -182 on the sense strand and at -182 to -184 and -192 to -195 on the nonsense strand. These sites lie within a stretch of 42 pyrimidines interrupted by a single guanine and within the sequence T-C-C-C-T-C-C-C-T-T-C-C-T-C-C-C-T-C-C-C-T.

=> d his

(FILE 'HOME' ENTERED AT 19:02:36 ON 10 MAR 2003)

FILE 'MEDLINE, CAPLUS, BIOSIS, SCISEARCH' ENTERED AT 19:02:47 ON 10 MAR 2003

L1 19805 S (CLOSE?(3A)CIRCULAR OR SUPERCOIL?)(5A)(DNA OR PLASMID OR VECT
L2 109211 S (CITRIC OR TARTARIC)(W)ACID
L3 1 S L1(S)L2
L4 4 S L1 AND L2
L5 4 DUP REM L4 (0 DUPLICATES REMOVED)
L6 26 S COLLAGEN AND L1
L7 10 DUP REM L6 (16 DUPLICATES REMOVED)
L8 0 S ATELOCOLLAGEN AND L1
L9 831271 S ARGININE OR LYSINE OR GLUTAMINE OR PROLINE OR HISTIDINE OR (G
L10 1123799 S MALTOSE OR LACTOSE OR GLUCOSE OR SORBITOL OR XYLITOL
L11 1900337 S L9 OR L10
L12 298 S L1(S)L11
L13 1 S L12 AND COLLAGEN

=> d bib ab l13

L13 ANSWER 1 OF 1 SCISEARCH COPYRIGHT 2003 ISI (R)
AN 2002:619590 SCISEARCH
GA The Genuine Article (R) Number: 574MH
TI Photosensitization of DNA damage by glycated proteins
AU Wondrak G T; Jacobson E L; Jacobson M K (Reprint)
CS Univ Arizona, Arizona Canc Ctr, Coll Pharm, Dept Pharmacol & Toxicol, Tucson, AZ 85721 USA (Reprint)
CYA USA
SO PHOTOCHEMICAL & PHOTOBIOLOGICAL SCIENCES, (MAY 2002) Vol. 1, No. 5, pp. 355-363.
Publisher: ROYAL SOC CHEMISTRY, THOMAS GRAHAM HOUSE, SCIENCE PARK, MILTON RD,, CAMBRIDGE CB4 0WF, CAMBS, ENGLAND.
ISSN: 1474 905X.
DT Article; Journal
LA English
REC Reference Count: 57
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB Photosensitized DNA damage in skin is thought to be an important mechanism of UV phototoxicity. Here we demonstrate that proteins modified by advanced glycation endproducts (AGE-proteins) are photosensitizers of DNA damage and show that multiple mechanisms are involved in AGE-sensitization. AGE-chromophores accumulate on long-lived skin proteins such as **collagen** and elastin as a consequence of glycation, the spontaneous amino-carbonyl reaction of protein-bound **lysine** and **arginine** residues with reactive carbonyl species. AGE-proteins accumulate in both the nucleus and the cytoplasm of mammalian cells. To test the hypothesis that protein-bound AGEs in close proximity to DNA are potent UV-photosensitizers, a simple plasmid DNA cleavage assay was established. Irradiation of **supercoiled** PhiX 174 **DNA** with solar simulated light in the presence of AGE-modified bovine serum albumin or AGE-modified RNAse A induced DNA single strand breaks. The sensitization potency of the glycated protein correlated with increased AGE-modification and the unmodified protein displayed no photosensitizing activity. AGE-sensitized formation of reactive oxygen species was not fully responsible for the observed DNA damage and other mechanisms such as direct electron transfer interaction between photoexcited AGE and DNA are likely to be involved. Glycated proteins in skin may equally function as potent photosensitizers of DNA damage with implications for photoaging and photocarcinogenesis.